ONLINE SEARCH REQUEST FORM

USER Jennifer SERIAL NUMBER 10/08 794,3

ART UNIT 1651 PHONE 308-7922 DATE 6/22/03

Please give a detailed statement of requirements. Describe as specifically as possible the subject matter to be searched. Define any terms that may have special meaning. Give examples or relevant citations, authors, or keywords, if known.

You may include a copy of the broadest and or relevant claim(s).

Please search inventors

- compound of cl. 1
- process of making in streptomyces
  in bacteria
- Process of using ... Mycl tuberculosis
- Medium of cl. 5

STAFF USE ONLY

COMPLETED 7/1

SEARCHER Hamlet

ONLINE TIME 75 (minutes) TOTAL TIME 60

NO. OF DATABASES 4 prp

SYSTEMS

X CAS ONLINE

___ DARC/QUESTEL

___ DIALOG

___ SDC

___ OTHER

```
=> d his l1-l14

     (FILE 'HCAPLUS' ENTERED AT 10:16:31 ON 01 JUL 2003)
L1            39 S KUMARI B?/AU
L2             5 S BORDOLOI N?/AU
L3             3 S BORDOLOI G?/AU
L4           906 S ROY M?/AU
L5            35 S BORA T?/AU
L6           964 S L1-5
L7             3 S L6 AND ?NICOTINAT?
L8             3 S STREPTOMYCES SP. 201
L9             3 S L7 OR L8
                 SELECT RN L9 1-3

     FILE 'REGISTRY' ENTERED AT 10:18:28 ON 01 JUL 2003
L10            1 S E1

     FILE 'HCAPLUS' ENTERED AT 10:18:59 ON 01 JUL 2003
L11            3 S L9 AND L10 <- 3 cites for inv. search
L12            3 S 373384-06-6/RN <- Reg # for claimed cpd
L13            3 S L11-12 <-------------------------------
L14            0 S THRONTON?<-
```

* the claimed cpd appears to be novel. It is found only in the inventors work

I looked in WPIX(Derwent), Biosis, Japio, Scisearch, Uspatfull, Medline & CABA for this term. I did not get any hits relevant to culture media

Inventor search

MARX 10/027,913

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=> d his

     (FILE 'HOME' ENTERED AT 10:16:11 ON 01 JUL 2003)

     FILE 'HCAPLUS' ENTERED AT 10:16:31 ON 01 JUL 2003
L1           39 S KUMARI B?/AU
L2            5 S BORDOLOI N?/AU
L3            3 S BORDOLOI G?/AU
L4          906 S ROY M?/AU
L5           35 S BORA T?/AU
L6          964 S L1-5
L7            3 S L6 AND ?NICOTINAT?
L8            3 S STREPTOMYCES SP. 201
L9            3 S L7 OR L8
                SELECT RN L9 1-3

     FILE 'REGISTRY' ENTERED AT 10:18:28 ON 01 JUL 2003
L10           1 S E1

     FILE 'HCAPLUS' ENTERED AT 10:18:59 ON 01 JUL 2003
L11           3 S L9 AND L10
```

3 cites w/ 1 compound displayed

=> d ibib abs hitstr ind 1-3

L11 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:833516 HCAPLUS
DOCUMENT NUMBER: 137:316051
TITLE: Preparation of 2-Methylheptyl **isonicotinate** as antifungal and antibacterial
INVENTOR(S): **Bordoloi, Gojendra Nath**; **Kumari, Babita**; **Bordoloi, Nabibjyoti**; **Roy, Monoj Kanti**; **Bora, Tarun Chandra**
PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

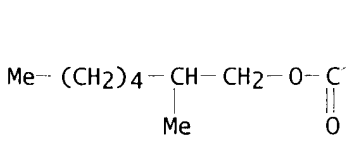
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002161027	A1	20021031	US 2001-27913	20011220

PRIORITY APPLN. INFO.: IN 2001-DE199 A 20010227

AB The present invention relates to a novel antifungal antibacterial compd. 2-**methylheptylisonicotinate** (I) obtained from natural sources and to a process for the isolation thereof. I was isolated from **streptomyces sp. 201** and its antimicrobial and antifungal activity was shown.

IT **373384-06-6**, 2-Methylheptyl **isonicotinate**
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(prepn. of Methylheptyl **isonicotinate** as antifungal and antibacterial)

RN 373384-06-6 HCAPLUS
CN 4-Pyridinecarboxylic acid, 2-methylheptyl ester (9CI) (CA INDEX NAME)

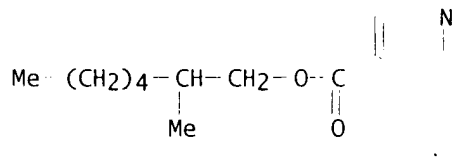


IC ICM A61K031-4409
ICS C07D213-46; C12P017-12
NCL 514354000
CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 1
ST methylheptyl **isonicotinate** antifungal antibacterial prepn
IT Antibacterial agents
Fungicides
(prepn. of Methylheptyl **isonicotinate** as antifungal and antibacterial)
IT **373384-06-6**, 2-Methylheptyl **isonicotinate**
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(prepn. of Methylheptyl **isonicotinate** as antifungal and antibacterial)

L11 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:210365 HCAPLUS
DOCUMENT NUMBER: 136:365226
TITLE: Potential of a novel antibiotic, 2-methylheptyl **isonicotinate**, as a biocontrol agent against fusarial wilt of crucifers
AUTHOR(S): **Bordoloi, Gojen N.**; **Kumari, Babita**; Guha, Arijit; Thakur, Debajit; Bordoloi, Manabjyoti; **Roy, Monoj K.**; **Bora, Tarun C.**
CORPORATE SOURCE: Biochemistry Division, Regional Research Laboratory, Jorhat, 785 006, India
SOURCE: Pest Management Science (2002), 58(3), 297-302
CODEN: PMSCFC; ISSN: 1526-498X
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Screening for newer bioactive compds. from microbial metabolites resulted in the isolation of a novel antibiotic from the culture filtrate of **Streptomyces sp 201**. The bioactive compd., with antifungal and antibacterial activity, was identified as 2-methylheptyl **isonicotinate**. The antifungal activity of live culture, culture broth and the isolated bioactive compd. showed marked inhibition against dominant soil-borne phytopathogens such as Fusarium oxysporum Schlect, F. moniliforme Sheldon, F. semitectum Berkeley & Ravenel, F. solani (Martius) Sacc and Rhizoctonia solani Kuehn. The compd. had no effect on seed germination and seedling development as displayed by root and stem growth of the test plant species. In pot expts. with seedlings of cruciferous plants such as Raphanus sativus L (radish), Brassica campestris L (yellow mustard), Brassica oleracea var botrytis L (cauliflower), the antibiotic compd. showed promising protective activity of 92% when seeds of the test plants were treated at a dose of 50 .mu.gml-1 prior to sowing. Seed treatment with a spore suspension (3 .times. 108 spores ml-1) of the **Streptomyces sp 201** displayed protective activity in the range of 56-60%. Seeds coated with 2.5% Me cellulose-amended spores of the antagonist showed protective activity in the range of 64-72%. Further, seed treatment with the culture filtrate of the antagonist also showed promising protective activity in the range of 64-84%.

IT **373384-06-6P**, 2-Methylheptyl **isonicotinate**
RL: AGR (Agricultural use); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(control of fusarial wilt of crucifers using 2-methylheptyl **isonicotinate** from **Streptomyces sp 201**)
RN 373384-06-6 HCAPLUS
CN 4-Pyridinecarboxylic acid, 2-methylheptyl ester (9CI) (CA INDEX NAME)



CC 5-2 (Agrochemical Bioregulators)
ST methylheptyl **isonicotinate** Streptomyces fungicide Fusarium Brassica
IT Bean (Phaseolus vulgaris)
Brassica campestris

Cauliflower
Fungicides
Fusarium moniliforme
Fusarium oxysporum
Fusarium pallidoroseum
Fusarium solani
Pea
Radish (Raphanus sativus)
Rhizoctonia solani
(control of fusarial wilt of crucifers using 2-methylheptyl **isonicotinate** from **Streptomyces sp 201**)

IT Streptomyces
(so 201; control of fusarial wilt of crucifers using 2-methylheptyl **isonicotinate** from **Streptomyces sp 201**)

IT **373384-06-6P**, 2-Methylheptyl **isonicotinate**
RL: AGR (Agricultural use); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(control of fusarial wilt of crucifers using 2-methylheptyl **isonicotinate** from **Streptomyces sp 201**)

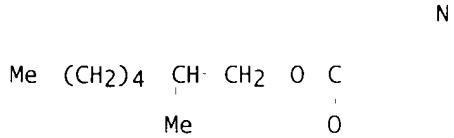
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:670679 HCAPLUS
DOCUMENT NUMBER: 135:355075
TITLE: Isolation and structure elucidation of a new antifungal and antibacterial antibiotic produced by **Streptomyces sp. 201**
AUTHOR(S): **Bordoloi, Gajen N.**; **Kumari, Babita**; Guha, Arijit; Bordoloi, Manobjyoti; Yadav, R. N. S.; **Roy, Monoj K.**; **Bora, Tarun C.**
CORPORATE SOURCE: Biochemistry Division and Natural Product Chemistry, Regional Research Laboratory (CSIR), Jorhat, 785006, India
SOURCE: Bioscience, Biotechnology, and Biochemistry (2001), 65(8), 1856-1858
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An antibacterial and antifungal antibiotic was isolated from the culture filtrate of **Streptomyces sp. 201**, and its structure was detd. as 2-methylheptyl **isonicotinate** by extensive use of NMR spectroscopy. The compd. exhibited marked antimicrobial activity against Bacillus subtilis, Shigella sp., Klebsiella sp., Escherichia coli, Proteus mirabilis, and the pathogenic fungi Fusarium moniliforme, F. semitectum, F. oxysporum, F. solani, and Rhizoctonia solani.

IT **373384-06-6P**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(new antifungal and antibacterial antibiotic produced by **Streptomyces sp. 201**)

RN 373384-06-6 HCAPLUS
CN 4-Pyridinecarboxylic acid, 2-methylheptyl ester (9CI) (CA INDEX NAME)



CC 10-1 (Microbial, Algal, and Fungal Biochemistry)
ST methylheptyl **isonicotinate** Streptomyces antibiotic
IT Antibiotics
Fungicides
Streptomyces
(new antifungal and antibacterial antibiotic produced by **Streptomyces sp. 201**)
IT **373384-06-6P**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(new antifungal and antibacterial antibiotic produced by **Streptomyces sp. 201**)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

search for thrombins media by component

MARX 10/027,913

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=> d que l73
L27             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7758-11-4
L28             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7757-79-1
L29             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7487-88-9
L30             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  10035-04-8
L31             4 SEA FILE=REGISTRY ABB=ON  PLU=ON  70-47-3 OR 3130-87-8 OR
                  2058-58-4 OR 5794-24-1
L33             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7647-14-5
L34             7 SEA FILE=REGISTRY ABB=ON  PLU=ON  CL3 FE/MF
L35             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND " IRON CHLORIDE
                  (FECL3)"
L36          2806 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27
L37         14901 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28
L38         13979 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L39           339 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30
L40         12722 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L41        108525 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L42         20894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35
L63         10582 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR K2HPO4 OR ?POTASSIUM
                  HYDROGEN PHOSPHATE
L64         32754 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR KNO3 OR POTASSIUM
                  NITRATE
L65         41633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM
                  SULFATE
L66         41684 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM(W)(S
                  ULFATE OR SULPHATE)
L67          1827 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 OR CALCIUM CHLORIDE(2A)DIH
                  YDRATE OR CACL2(W)2H2O
L68         29227 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 OR ASPARAGINE
L69        134427 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR MANNITOL
L70         56145 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FECL3 OR FERRIC CHLORIDE OR
                  L42
L71           167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND L64 AND L65 AND L66
L72             2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L68 AND L69 AND L70
L73             0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 AND L67

=> d que l79
L22          8843 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CULTURE MEDIA+PFT/CT
L27             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7758-11-4
L28             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7757-79-1
L29             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7487-88-9
L30             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  10035-04-8
L31             4 SEA FILE=REGISTRY ABB=ON  PLU=ON  70-47-3 OR 3130-87-8 OR
                  2058-58-4 OR 5794-24-1
L33             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7647-14-5
L34             7 SEA FILE=REGISTRY ABB=ON  PLU=ON  CL3 FE/MF
L35             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND " IRON CHLORIDE
                  (FECL3)"
L36          2806 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27
L37         14901 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28
L38         13979 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L39           339 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30
L40         12722 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L41        108525 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L42         20894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35
L63         10582 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR K2HPO4 OR ?POTASSIUM
                  HYDROGEN PHOSPHATE
L64         32754 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR KNO3 OR POTASSIUM
                  NITRATE
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Reg #'s of components

cites for each Reg #

cites from text search & Reg #

L72 cites not related to culture media

no citation having all the components

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L65       41633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM
                SULFATE
L66       41684 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM(W)(S
                ULFATE OR SULPHATE)
L67        1827 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 OR CALCIUM CHLORIDE(2A)DIH
                YDRATE OR CACL2(W)2H2O
L68       29227 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 OR ASPARAGINE
L69      134427 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR MANNITOL
L70       56145 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FECL3 OR FERRIC CHLORIDE OR
                L42
L71         167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND L64 AND L65 AND L66
L74          15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L68
L75          34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L69
L76          35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L70
L78           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L74 OR L75 OR L76) AND L67
L79           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 AND (FERMENT?/OBI OR L22)
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← $CaCl_2 \cdot H_2O$ 1 cite

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L28           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7757-79-1
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L31           4 SEA FILE=REGISTRY ABB=ON  PLU=ON  70-47-3 OR 3130-87-8 OR
                2058-58-4 OR 5794-24-1
L34           7 SEA FILE=REGISTRY ABB=ON  PLU=ON  CL3 FE/MF
L35           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND " IRON CHLORIDE
                (FECL3)"
L36        2806 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27
L37       14901 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28
L38       13979 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L40       12722 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L42       20894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35
L63       10582 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR K2HPO4 OR ?POTASSIUM
                HYDROGEN PHOSPHATE
L64       32754 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR KNO3 OR POTASSIUM
                NITRATE
L65       41633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM
                SULFATE
L66       41684 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM(W)(S
                ULFATE OR SULPHATE)
L68       29227 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 OR ASPARAGINE
L70       56145 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FECL3 OR FERRIC CHLORIDE OR
                L42
L71         167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND L64 AND L65 AND L66
L74          15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L68
L76          35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 AND L70
L81           4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 AND L76
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4 cites

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L22        8843 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CULTURE MEDIA+PFT/CT
L23         181 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22 AND STREPTOMYCES
L27           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7758-11-4
L28           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7757-79-1
L29           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7487-88-9
L30           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  10035-04-8
L31           4 SEA FILE=REGISTRY ABB=ON  PLU=ON  70-47-3 OR 3130-87-8 OR
                2058-58-4 OR 5794-24-1
L33           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7647-14-5
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L34           7 SEA FILE=REGISTRY ABB=ON  PLU=ON  CL3 FE/MF
L35           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND " IRON CHLORIDE
                (FECL3)"
L36        2806 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27
L37       14901 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28
L38       13979 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L39         339 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30
L40       12722 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L41      108525 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L42       20894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35
L63       10582 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR K2HPO4 OR ?POTASSIUM
                HYDROGEN PHOSPHATE
L64       32754 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR KNO3 OR POTASSIUM
                NITRATE
L65       41633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM
                SULFATE
L66       41684 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM(W)(S
                ULFATE OR SULPHATE)
L67        1827 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 OR CALCIUM CHLORIDE(2A)DIH
                YDRATE OR CACL2(W)2H2O
L68       29227 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 OR ASPARAGINE
L69      134427 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR MANNITOL
L70       56145 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FECL3 OR FERRIC CHLORIDE OR
                L42
L84          48 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23 AND (L63 OR L64 OR L65 OR
                L66 OR L67 OR L68 OR L69 OR L70)
L85          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L84 AND ANTIBIOTIC
L86          14 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L85 AND  16-2/SC,SX
L88           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L86 AND ANTIBIOTIC/AB
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looking for media for bugs that make an antibiotic

section code for fermentation

in abstract

```
=> d que l91
L22        8843 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CULTURE MEDIA+PFT/CT
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L28           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7757-79-1
L29           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7487-88-9
L31           4 SEA FILE=REGISTRY ABB=ON  PLU=ON  70-47-3 OR 3130-87-8 OR
                2058-58-4 OR 5794-24-1
L33           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7647-14-5
L34           7 SEA FILE=REGISTRY ABB=ON  PLU=ON  CL3 FE/MF
L35           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L34 AND " IRON CHLORIDE
                (FECL3)"
L36        2806 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27
L37       14901 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28
L38       13979 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L40       12722 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L41      108525 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L42       20894 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35
L63       10582 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR K2HPO4 OR ?POTASSIUM
                HYDROGEN PHOSPHATE
L64       32754 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR KNO3 OR POTASSIUM
                NITRATE
L65       41633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM
                SULFATE
L66       41684 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 OR MGSO4 OR MAGNESIUM(W)(S
                ULFATE OR SULPHATE)
L68       29227 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 OR ASPARAGINE
L69      134427 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR MANNITOL
L70       56145 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FECL3 OR FERRIC CHLORIDE OR
                L42
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L71 167 SEA FILE=HCAPLUS ABB=ON PLU=ON L63 AND L64 AND L65 AND L66
L72 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 AND L68 AND L69 AND L70 ← these 2 cites are not related to culture media
L91 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L72 AND L22

=> s l73 or l79 or l81 or l88 or l91
L92 14 L73 OR L79 OR L81 OR L88 OR L91 14 cites total

=> d ibib abs hitrn ind 1-14

L92 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:785064 HCAPLUS
DOCUMENT NUMBER: 138:23708
TITLE: Statistical optimization of medium components for the improved production of cystocin by **Streptomyces** sp. GCA0001
AUTHOR(S): Kharel, Madan Kumar; Lee, Hei Chan; Sohng, Jae Kyung; Liou, Kwangkyoung
CORPORATE SOURCE: Institute of Biomolecule Reconstruction, Sun Moon University, Chungnam, 336-840, S. Korea
SOURCE: Journal of Industrial and Engineering Chemistry (Seoul, Republic of Korea) (2002), 8(5), 427-431
CODEN: JIECFI; ISSN: 1226-086X
PUBLISHER: Korean Society of Industrial and Engineering Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Different medium components were screened to improve the productivity of the novel bioactive compd., cystocin from the **Streptomyces** sp. GC0001. Plackett and Burman statistical design was employed to screen the effective components. Finally, response surface methodol. based on three factors Box-Behnken design was applied to optimize the limiting variables such as soytone, glucose and **magnesium sulfate** concn. The **antibiotic** yield was increased accordingly with the concn. of soytone and glucose. **Magnesium sulfate** has vital role in productivity besides the other carbon and nitrogen sources. Pharmamedia retained the strongest neg. effect for the prodn. of **antibiotic** and the effect due to sucrose and calcium carbonate was minor. The optimal concns. of medium components for the cystocin prodn. are detd. as; soytone (50 g/L), glucose (40 g/L) and **magnesium sulfate** (30 g/L).
IT **7647-14-5**, Sodium chloride, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)
CC **16-2** (Fermentation and Bioindustrial Chemistry)
ST **Streptomyces** statistical medium optimization cystocin fermn
IT Industrial liquors
(corn steep liquor; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)
IT Flours and Meals
(cottonseed, Pharmamedia; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)
IT Cottonseed
(flour and meal, Pharmamedia; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)
IT Distillery slops
(solubles; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)
IT Peptones

RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(soytones; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

IT **Culture media**
Fermentation
Streptomyces
(statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

IT Soybean oil
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

IT Optimization
(statistical; statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

IT 50-99-7, Dextrose, processes 52-90-4, L-Cysteine, processes 57-50-1, Sucrose, processes 471-34-1, Calcium carbonate, processes 7646-79-9, Cobalt chloride, processes **7647-14-5**, Sodium chloride, processes 9004-53-9, Dextrin 9005-25-8, Starch, processes 10034-99-8, **Magnesium sulfate** heptahydrate
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

IT 478011-74-4P, Cystocin
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(statistical optimization of medium components for improved prodn. of cystocin by **Streptomyces** sp. GCA0001)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:784866 HCAPLUS
DOCUMENT NUMBER: 138:71950
TITLE: The intensification of prodigiozin synthesis under the conditions of **Streptomyces** fulvissimus cultivation
AUTHOR(S): Gorozia, I.; Lomtatidze, Z.
CORPORATE SOURCE: I. Javakhishvili Tbilisi State University, Georgia
SOURCE: Bulletin of the Georgian Academy of Sciences (2002), 165(3), 577-579
CODEN: BGASFC
PUBLISHER: Georgian Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The strain producing the **antibiotic** of prodigiosin group has been obtained from the high-mountain (Khevi region) soils of Georgia. This strain was identified as **Streptomyces** fulvissimus. The optimal conditions of producer cultivation were established under which the intensive synthesis of **antibiotic** took place.

IT **70-47-3**, L-**Asparagine**, processes **7757-79-1**, **Potassium nitrate**, processes **7758-11-4**, Dipotassium phosphate
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(improved **Streptomyces** fulvissimus prodigiosin fermn. medium)

CC **16-2** (Fermentation and Bioindustrial Chemistry)

ST **Streptomyces** prodigiosin fermn medium improvement

IT Carbon sources, microbial
Culture media
Fermentation

Nitrogen sources, microbial
Streptomyces fulvissimus
(improved **Streptomyces** fulvissimus prodigiosin fermn. medium)
IT Peptones
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(improved **Streptomyces** fulvissimus prodigiosin fermn. medium)
IT 50-70-4, Sorbitol, processes 50-99-7, Dextrose, processes 57-50-1, Sucrose, processes 61-90-5, L-Leucine, processes 63-42-3, Lactose 69-65-8, D-**Mannitol** 69-79-4, Maltose **70-47-3**, L-**Asparagine**, processes 506-87-6, Ammonium carbonate 6484-52-2, Ammonium nitrate, processes 7558-79-4, Disodium phosphate 7631-99-4, Sodium nitrate, processes **7757-79-1**, **Potassium nitrate**, processes 7757-93-9, Calcium hydrogen phosphate **7758-11-4**, Dipotassium phosphate 7758-87-4, Tricalcium phosphate 7783-20-2, Ammonium sulfate, processes 9005-25-8, Starch, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(improved **Streptomyces** fulvissimus prodigiosin fermn. medium)
IT 82-89-3P, Prodigiosine
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(improved **Streptomyces** fulvissimus prodigiosin fermn. medium)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:242874 HCAPLUS
DOCUMENT NUMBER: 136:400633
TITLE: Clavulanic Acid Degradation in **Streptomyces** clavuligerus Fed-Batch Cultivations
AUTHOR(S): Roubos, Johannes A.; Krabben, Preben; de Laat, Wim T. A. M.; Babuska, Robert; Heijnen, Joseph J.
CORPORATE SOURCE: Faculty of Information Technology and Systems, Control Systems Engineering, Delft University of Technology, Delft, 2600 GA, Neth.
SOURCE: Biotechnology Progress (2002), 18(3), 451-457
CODEN: BIPRET; ISSN: 8756-7938
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Clavulanic acid (CA) is an important **antibiotic** that is produced by **Streptomyces** clavuligerus. CA is unstable and product degrdn. has turned out to have a major impact on product titers in fed-batch cultivations. Three different types of expts. have been used to elucidate CA degrdn. under fed-batch cultivation conditions. First, the influence of individual medium compds. was examd. Second, degrdn. was monitored during the exponential growth phase in batch cultivations. Third, CA degrdn. was studied in the supernatant of samples taken during a fed-batch. In addn., data from six fed-batch cultivations were studied to derive information about CA degrdn. during the prodn. phase. These cultivations were based on a mineral medium, contg. glycerol, glutamate, ammonium, and phosphate as the main nutrients. The ammonium concn. had a large influence on the degrdn. rate const. In addn., either changes in the substrate availability or high concns. of ammonium or glycerol cause a major increase in the degrdn. rate const. Finally, a linear and a fuzzy logic model were made to predict CA degrdn. rates in these fed-batches.
CC **16-2** (Fermentation and Bioindustrial Chemistry)
ST **Streptomyces** fed batch fermn clavulanic acid degrdn
IT **Culture media**
Streptomyces clavuligerus
(clavulanic acid degrdn. in **Streptomyces** clavuligerus

fed-batch cultivations)
IT Growth, microbial
(exponential; clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
IT Fermentation
(fed-batch; clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
IT Simulation and Modeling, biological
(fuzzy logic; clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
IT Growth, microbial
(kinetics; clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
IT 56-81-5, Glycerol, processes 7783-20-2, Ammonium sulfate, processes 10034-99-8, **Magnesium sulfate** heptahydrate
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
IT 58001-44-8P, Clavulanic acid
RL: BMF (Bioindustrial manufacture); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(clavulanic acid degrdn. in **Streptomyces** clavuligerus fed-batch cultivations)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:54114 HCAPLUS
DOCUMENT NUMBER: 136:215477
TITLE: A chemically defined medium for production of actinomycin D by **Streptomyces** parvulus
AUTHOR(S): Vieira De Queiroz Sousa, Maria De Fatima; Lopes, Carlos Edison; Pereira Junior, Nei
CORPORATE SOURCE: Departmento de Antibioticos, Centro de Ciencias Biologicas da Universidade Federal de Pernambuco, Recife, 50670-901, Brazil
SOURCE: Brazilian Archives of Biology and Technology (2001), 44(3), 227-231
CODEN: BABTFC; ISSN: 1516-8913
PUBLISHER: Instituto de Tecnologia do Parana
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A chem. defined medium consisting of D(+)fructose, L(-)threonine, **K2HPO4**, **MgSO4**.bul.7H2O, ZnSO4.bul.7H2O, CaCl2.bul.2H2O, FeSO4.bul.7H2O and deionized water, was developed to maximize the synthesis of actinomycin D by the **Streptomyces** parvulus DAUFPE 3124 strain. This medium resulted in the max. **antibiotic** concn. of 133 mg/L while using the original medium the prodn. of actinomycin D was poor not surpassing 43 mg/L.
IT **70-47-3**, **Asparagine**, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(amino acid effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)
CC **16-2** (Fermentation and Bioindustrial Chemistry)
ST actinomycin fermn culture medium defined **Streptomyces**
IT Carbon sources, microbial
(C source effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)
IT **Antibiotics**
Fermentation

Streptomyces parvulus
(actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT Nitrogen sources, microbial
(amino acid effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT Amino acids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(amino acid effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT **Culture media**
(defined; actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT 50-99-7, D Glucose, biological studies 57-48-7, D Fructose, biological studies 57-50-1, Sucrose, biological studies 58-86-6, D-(+)-Xylose, biological studies 59-23-4, D Galactose, biological studies 69-65-8, D-**Mannitol** 87-89-8, Myoinositol 3458-28-4, D-Mannose 10323-20-3, D(-) Arabinose
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(C source effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT 50-76-0P, Actinomycin D
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 56-45-1, L-Serine, biological studies 56-85-9, Glutamine, biological studies 61-90-5, Leu, biological studies 63-68-3, L-Methionine, biological studies 70-26-8, L-Ornithine **70-47-3**, **Asparagine**, biological studies 71-00-1, L-Histidine, biological studies 72-18-4, L-Valine, biological studies 72-19-5, Threonine, biological studies 73-22-3, L-Tryptophan, biological studies 147-85-3, L-Proline, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(amino acid effects on actinomycin D prodn. by **Streptomyces** parvulus in a defined culture medium)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:797550 HCAPLUS
DOCUMENT NUMBER: 136:68753
TITLE: Improvement of the fermentation productivity of a new **antibiotic** AGPM by orthogonal design experiment
AUTHOR(S): Shi, Bing-xing; Zhao, Hong; Liu, Xi-peng; Yuan, Ying-jin; Hu, Zong-ding
CORPORATE SOURCE: Dept. of Biochemical Eng., Tianjin Univ., Tianjin, 300072, Peop. Rep. China
SOURCE: Guocheng Gongcheng Xuebao (2001), 1(4), 442-444
CODEN: CJPEB5; ISSN: 1009-606X
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The effects of medium compn. on the activity of a new **antibiotic** AGPM was studied by orthogonal design expt. It seems that nitrogen source presented the most significant effect on the prodn. of AGPM and that higher ratio of carbon to nitrogen was beneficial. It was concluded that the fermn. activity was increased by 18.9 times to 1562.2 u/mL under the

optimal conditions as the medium was composed of glucose 5 g/L, corn starch 40 g/L, soybean meal 16 g/L, corn steep liquor 2 mL, **K2HPO4** 1.0 g/L, **MgSO4**.cntdot.7H2O 0.5 g/L, NaCl 0.5 g/L and amylase 0.05 g/L.

IT **7487-88-9**, **Magnesium sulfate**, biological studies **7647-14-5**, Sodium chloride (NaCl), biological studies **7758-11-4**, Potassium phosphate (**K2HPO4**)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

CC **16-2** (Fermentation and Bioindustrial Chemistry)

ST **antibiotic** APGM manuf **Streptomyces** culture medium

IT **Antibiotics**
(AGPM; improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

IT Industrial liquors
(corn steep liquor; improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

IT Carbon sources, microbial
Culture media
Nitrogen sources, microbial
Soybean meal
Streptomyces
(improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

IT 50-99-7, D-Glucose, biological studies **7487-88-9**, **Magnesium sulfate**, biological studies **7647-14-5**, Sodium chloride (NaCl), biological studies **7758-11-4**, Potassium phosphate (**K2HPO4**) 9000-92-4, Amylase 9005-25-8, Corn starch, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

IT 7723-14-0, Phosphorus, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(microbial phosphorous sources; improvement of fermn. productivity of a new **antibiotic** AGPM by orthogonal design expt.)

L92 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:761728 HCAPLUS
DOCUMENT NUMBER: 136:52748
TITLE: Simocyclinones: diversity of metabolites is dependent on fermentation conditions
AUTHOR(S): Schimana, J.; Walker, M.; Zeeck, A.; Fiedler, H-P.
CORPORATE SOURCE: Mikrobiologisches Institut, Universitat Tubingen, Tubingen, 72076, Germany
SOURCE: Journal of Industrial Microbiology & Biotechnology (2001), 27(3), 144-148
CODEN: JIMBFL; ISSN: 1367-5435
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Simocyclinones, a novel group of angucyclinone **antibiotics**, are produced by **Streptomyces** antibioticus Tu 6040. The compds. show antibacterial and antitumor properties. In submerged cultivation, the prodn. of simocyclinones is strongly dependent on the carbon and nitrogen sources used in a chem. defined medium. Productivity of distinct components and diversity of simocyclinone compds. are influenced by the medium compn. Four series of simocyclinone compds. were detected by high-performance liq. chromatog. (HPLC) diode array detector (DAD) and

HPLC electrospray ionization (ESI) mass spectrometry (MS) anal., isolated and the structures detd. by NMR (NMR) techniques. Under optimized conditions, simocyclinone D8 was produced in an amt. of 300 mg l-1 and simocyclinone C4 in a concn. up to 50 mg l-1.

CC **16-2** (Fermentation and Bioindustrial Chemistry)

ST **Streptomyces** simocyclinone diversity fermn medium

IT **Culture media**
(defined; diversity of simocyclinones produced by **Streptomyces** antibioticus is dependent on fermn. conditions)

IT Carbon sources, microbial
Fermentation
Nitrogen sources, microbial
Soybean meal
(diversity of simocyclinones produced by **Streptomyces** antibioticus is dependent on fermn. conditions)

IT **Streptomyces** antibioticus
(strain Tu 6040; diversity of simocyclinones produced by **Streptomyces** antibioticus is dependent on fermn. conditions)

IT 56-81-5, Glycerol, processes 56-85-9, L-Glutamine, processes 69-65-8, D-**Mannitol** 74-79-3, L-Arg, processes 9005-25-8, Starch, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(diversity of simocyclinones produced by **Streptomyces** antibioticus is dependent on fermn. conditions)

IT 301845-96-5P, Simocyclinone D4 301845-97-6P, Simocyclinone D8
381722-59-4P, Simocyclinone D7 381722-61-8P, Simocyclinone A1
381722-63-0P 381722-64-1P, Simocyclinone C4
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(diversity of simocyclinones produced by **Streptomyces** antibioticus is dependent on fermn. conditions)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:558732 HCAPLUS
DOCUMENT NUMBER: 136:149944
TITLE: Studies on production of thermostable alkaline protease from thermophilic and alkalophilic Bacillus sp. JB-99 in a chemically defined medium
AUTHOR(S): Johnvesly, B.; Naik, G. R.
CORPORATE SOURCE: Department of Biotechnology, Gulbarga University, Gulbarga, 585106, India
SOURCE: Process Biochemistry (Oxford, United Kingdom) (2001), 37(2), 139-144
CODEN: PBCHE5; ISSN: 1359-5113
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The thermophilic and alkalophilic Bacillus sp. JB-99 was isolated from sugarcane molasses and was cultured in 250 mL Erlenmeyer flasks contg. 50 mL of synthetic medium consisting of (g/l): citric acid; 10.0, NaNO3; 10.0, **K2HPO4**; 5.0, **MgSO4**.7H2O; 0.3, **CaCl2**.
2H2O; 0.2, NaCl; 5.0 and Na2CO3; 10.0 at pH 10.0. The cultures were incubated at 55 .degree.C with agitation (180 rpm) for 24 h. To study the effect of different carbon and nitrogen sources on enzyme yield (U/mL): citric acid (12780), sol. starch (12480); fructose (11760) and raffinose (11650) were found best carbon sources, while NaNO3 (12780) and **KNO3** were found best nitrogen sources. The optimum temp. and pH for protease activity was 70 .degree.C and 11.0, resp. The addn. of 10 mM

Ca2+ enhanced the optimum temp. 80 .degree.C and retained 78% activity even after 1 h heat treatment at 80 .degree.C. Proteolytic activity was completely inhibited by 1 mM PMSF and TPCK showed that it seems to be trypsin like serine alk. protease. The enzyme activity was enhanced in the presence of 10 mM metal ions namely Mn2+, Mg2+, Cu2+ and Co2+ and activity also inhibited in the presence of 10 mM metal ions, such as Fe3+, Hg2+ and Zn2+. The enzyme was stable in the presence of 5% H2O2.

IT **7647-14-5**, Sodium chloride, processes **7757-79-1**, **Potassium nitrate**, processes **7758-11-4**, Dipotassium phosphate **10035-04-8**, **Calcium chloride dihydrate**
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

CC 16-4 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 7

ST Bacillus alk protease defined medium

IT Meat extracts
(beef; prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT **Culture media**
(defined; prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT Structure-activity relationship
(enzyme-inhibiting; prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT Yeast
(ext.; prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT Temperature
pH
(optimum for enzyme; prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT Bacillus (bacterium genus)
Carbon sources, microbial
Fermentation
Nitrogen sources, microbial
Thermal stability
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT Caseins, processes
Gelatins, processes
Peptones
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT 50-69-1, D-Ribose 50-99-7, Dextrose, processes 56-81-5, Glycerol, processes 57-13-6, Urea, processes 57-48-7, D-Fructose, processes 57-50-1, Sucrose, processes 58-86-6, D-Xylose, processes 59-23-4, D-Galactose, processes 63-42-3, Lactose 68-04-2, Trisodium citrate 69-79-4, Maltose 77-92-9, Citric acid, processes 497-19-8, Sodium carbonate, processes 512-69-6, D-Raffinose 3458-28-4, D-Mannose 5328-37-0, L-Arabinose 6484-52-2, Ammonium nitrate, processes 7631-99-4, Sodium nitrate, processes **7647-14-5**, Sodium chloride, processes **7757-79-1**, **Potassium nitrate**, processes **7758-11-4**, Dipotassium phosphate 7783-20-2, Ammonium sulfate, processes 9005-25-8, Starch, processes 10034-99-8, **Magnesium sulfate** heptahydrate **10035-04-8**, **Calcium chloride dihydrate** 12125-02-9, Ammonium chloride, processes

RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT 9073-77-2P
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

IT 14127-61-8, Ca2+, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(prodn. of thermostable alk. protease from thermophilic alkalophilic Bacillus sp. JB-99 in a chem. defined medium)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:407295 HCAPLUS
DOCUMENT NUMBER: 135:60218
TITLE: Microbial growth and production kinetics of **Streptomyces** antibioticus Tu 6040
AUTHOR(S): Theobald, Uwe; Schimana, Judith; Fiedler, Hans-Peter
CORPORATE SOURCE: Universitat Tubingen, Mikrobiologisches Institut, Tubingen, D-72076, Germany
SOURCE: Antonie van Leeuwenhoek (2000), 78(3-4), 307-313
CODEN: ALJMAO; ISSN: 0003-6072
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Streptomyces** antibioticus Tu 6040 is the producer of simocyclinones, which belong to a novel family of angucyclinone **antibiotics** some of which show antitumor activities. Growth and **antibiotic** prodn. is dependent on the medium compn., esp. on the C and N source, and on the fermn. conditions. The best results with respect to **antibiotic** productivity were achieved using a chem. defined medium with glycerol and L-lysine as C and N source, resp., in an airlift fermenter with minimized shear stress at low gas flow rates without O limitation. These conditions led to a homogeneous formation of pellets of 1-2 mm in diam. and guaranteed reproducible product yields of the main compd., simocyclinone D8, in the range of 300 mg/L.

CC **16-2** (Fermentation and Bioindustrial Chemistry)

ST simocyclinone fermn carbon nitrogen source **Streptomyces**

IT Soybean oil
Sunflower oil
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(C and N source effects on microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

IT Fermentation apparatus
(air-lift fermentor; microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

IT Carbon sources, microbial
Culture media
Growth, microbial
Nitrogen sources, microbial
Streptomyces antibioticus
(microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

IT 50-99-7, Glucose, biological studies 56-40-6, Glycine, biological studies 56-81-5, Glycerol, biological studies 56-85-9, L-Glutamine,

biological studies 56-86-0, L-Glutamic acid, biological studies 56-87-1, L-Lys, biological studies 57-13-6, Urea, biological studies 57-48-7, Fructose, biological studies 57-50-1, Sucrose, biological studies 59-23-4, Galactose, biological studies 60-18-4, L-Tyrosine, biological studies 61-90-5, L-Leucine, biological studies 63-91-2, L-Phenylalanine, biological studies 69-65-8, **Mannitol** 69-79-4, Maltose 72-18-4, L-Valine, biological studies 73-22-3, L-Tryptophan, biological studies 74-79-3, L-Arg, biological studies 147-85-3, L-Proline, biological studies 6484-52-2, Ammonium nitrate, biological studies 7783-20-2, Ammonium sulfate, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(C and N source effects on microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

IT 301845-97-6P, Simocyclinone D 8
RL: BMF (Bioindustrial manufacture); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)
(microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

IT 9005-25-8, Starch, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(sol.; C and N source effects on microbial growth and prodn. of simocyclinone D8 by **Streptomyces** antibioticus Tu 6040)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:350132 HCAPLUS
DOCUMENT NUMBER: 135:91573
TITLE: Production of an antifungal **antibiotic** by **Streptomyces** aburaviensis 1DA-28
AUTHOR(S): Raytapadar, S.; Paul, A. K.
CORPORATE SOURCE: Microbiology Laboratory, Department of Botany, Calcutta University, Calcutta, India
SOURCE: Microbiological Research (2001), 155(4), 315-323
CODEN: MCRSEJ; ISSN: 0944-5013
PUBLISHER: Urban & Fischer Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A broad-spectrum antifungal **Streptomyces** isolate, 1DA-28, from Indian soil was characterized and identified as **Streptomyces** aburaviensis var. ablastmyceticus (MTCC 2469). Nutritional and cultural conditions for the prodn. of **antibiotic** by this organism under shake-flask conditions were detd. **Antibiotic** prodn. in synthetic medium reached the max. on the 5th day of incubation at 30.degree.. Glucose and starch were found to be the best C sources while NH4NO3 was preferred as N source. Optimum temp. and pH for **antibiotic** prodn. were 32.degree. and 7.4, resp. Phosphate at a concn. sub-optimal for growth enhanced **antibiotic** prodn. Supplementation of medium with casein hydrolyzate improved both growth and **antibiotic** titer but yeast ext. exhibited marked inhibition.

IT **70-47-3**, L-**Asparagine**, biological studies
7757-79-1, **Potassium nitrate**, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions)

CC **16-2** (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 10
ST antifungal **antibiotic** fermn nutrition culture media **Streptomyces**
IT **Antibiotics**
Carbon sources, microbial
Culture media
Fermentation
Growth, microbial
Nitrogen sources, microbial
Nutrition, microbial
Streptomyces aburaviensis
Streptomyces aburaviensis ablastmyceticus
pH
(**antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions)
IT Amino acids, biological studies
Caseins, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions)
IT Fungicides
(**antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions and antifungal spectrum)
IT Alternaria alternata
Aspergillus niger
Bacillus cereus
Bacillus subtilis
Citrobacter
Colletotrichum dematium
Curvularia lunata
Curvularia pallescens
Escherichia coli
Helminthosporium oryzae
Micrococcus flavus
Phytophthora
Pseudomonas fluorescens
Saccharomyces cerevisiae
(antimicrobial spectrum of **antibiotics** produced in **Streptomyces** aburaviensis)
IT Yeast
(ext.; **antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions)
IT 50-99-7, Glucose, biological studies 51-35-4, L-Hydroxyproline 52-90-4, L-Cys, biological studies 54-12-6, Tryptophan 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 56-45-1, L-Ser, biological studies 56-81-5, Glycerol, biological studies 56-86-0, L-Glutamic acid, biological studies 57-48-7, Fructose, biological studies 57-50-1, Sucrose, biological studies 58-86-6, Xylose, biological studies 59-23-4, Galactose, biological studies 63-42-3, Lactose 63-68-3, L-Methionine, biological studies 63-91-2, L-Phenylalanine, biological studies 69-65-8, **Mannitol** 69-79-4, Maltose **70-47-3**, L-**Asparagine**, biological studies 72-18-4, L-Valine, biological studies 72-19-5, L-Threonine, biological studies 74-79-3, L-Arg, biological studies 87-89-8, Meso-Inositol 147-81-9, Arabinose 3458-28-4, Mannose 3615-41-6, Rhamnose 6484-52-2, Ammonium nitrate, biological studies 7631-99-4, Sodium nitrate, biological studies **7757-79-1**, **Potassium**

nitrate, biological studies 7783-20-2, Diammonium sulfate, biological studies 9005-25-8, Starch, biological studies 12125-02-9, Ammonium chloride, biological studies 13446-48-5, Ammonium nitrite 14265-44-2, Phosphate, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**antibiotic** prodn. in **Streptomyces** aburaviensis influenced by nutritional and culture conditions)
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:223475 HCAPLUS
DOCUMENT NUMBER: 135:32774
TITLE: Optimisation of nutritional requirements and process control parameters for the production of HA-2-91, a new tetraene polyene **antibiotic**
AUTHOR(S): Gupte, T. E.; Naik, S. R.
CORPORATE SOURCE: Laboratory of Industrial Microbiology and Fermentation, Research and Development Centre, Hindustan Antibiotics Ltd., Pune, 411 018, India
SOURCE: Hindustan Antibiotics Bulletin (1998), 40(1-4), 5-13
CODEN: HINAAU; ISSN: 0018-1935
PUBLISHER: Hindustan Antibiotics, Ltd
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:32774
AB HA-2-91, a new tetraene polyene **antibiotic** produced during submerged fermn. of **Streptomyces** arenae var ukrainiana. Optimization of nutritional requirements and process control parameters were studied for higher productivity of HA-2-91 during fermentative prodn. in shaken flasks using complex media. Exptl. findings indicate that jowar starch (Sorghum vulgare) is the best carbon source while corn steep liquor in combination with peanut meal are the best nitrogen sources. Exogenous addn. of amino acids, divalent cations and fatty acids suppressed the productivity of HA-2-91. Incorporation of glucose into the prodn. medium above 5% (w/v) results in inhibition of productivity of HA-2-91 which may be due to catabolite regulation. The concn. of phosphate ions above 10 ppm also showed similar suppression effect on the productivity of HA-2-91. However, ferrous ions at 100 ppm showed slight stimulatory effect on the prodn. of HA-2-91. The optimum process control parameters for the prodn. of HA-2-91 were found to be temp., 28.degree.C; inoculum concn. from seed to prodn. medium, 1% (vol./vol.); pH and vol. of prodn. medium 6.5 and 100 mL resp.; and fermn. cycle time, 120 h.
IT **7647-14-5**, Sodium chloride, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
CC **16-2** (Fermentation and Bioindustrial Chemistry)
ST **Streptomyces** culture medium **antibiotic** prodn
IT **Antibiotics**
(HA-2-91; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Fermentation
(batch; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)

IT Meat extracts
(beef; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Temperature effects, biological
pH
(biol. effects; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Industrial liquors
(corn steep liquor; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Flours and Meals
(corn; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Yeast
(ext.; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Corn
(meal; optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Aeration
Carbon sources, microbial
Culture media
Nitrogen sources, microbial
Peanut meal
Soybean meal
Streptomyces arenae ukrainiana
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT Peptones
Soybean oil
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT 60-33-3, Linoleic acid, biological studies 112-80-1, Oleic acid, biological studies
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT 261621-47-0P, **Antibiotic** HA-2-91
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
IT 50-99-7, Dextrose, biological studies 471-34-1, Calcium carbonate, biological studies 7585-39-9, .beta.-Dextrin **7647-14-5**, Sodium chloride, biological studies 7783-20-2, Ammonium sulfate, biological studies 9005-25-8, Starch, biological studies 14265-44-2, Phosphate,

biological studies 15438-31-0, Fe2+, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(optimization of nutritional requirements and process control parameters for the prodn. of HA-2-91, a new tetraene polyene **antibiotic**)
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L92 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1964:437550 HCAPLUS
DOCUMENT NUMBER: 61:37550
ORIGINAL REFERENCE NO.: 61:6540d-g
TITLE: Spectral changes in a cationic dye due to interaction with macromolecules. I. Behavior of dye alone in solution and the effect of added macromolecules
AUTHOR(S): Kay, Robert E.; Walwick, E. Richard; Gifford, Cheryl K.
CORPORATE SOURCE: Philco Res. Lab., Newport Beach, CA
SOURCE: Journal of Physical Chemistry (1964), 68(7), 1896-1906
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB In the course of examg. the use of carbocyanine dyes as agents for the detection of trace amts. of protein and other macromols., the spectral changes resulting from the interaction of various macromols. with the dye 4,5,4',5'-dibenzo-3,3'-diethyl-9-methylthiacarbocyanine bromide were observed, and the effects of environmental factors on the absorption spectrum of the free dye were detd. The aq. dye soln. was stable over the pH range 3.8-9.6 and unaffected by storage at temps. <60.degree., but it was unstable when exposed to light. The effects of pH, solvent, dye concn., temp., and inorg. ions on the wavelength of the dye absorption max. were ascertained. The pH had no effect on the position of the absorption max., but other variables such as the compn. of the solvent system or changes in the dye concn. produced changes in the wavelength of the max. Max. were observed at 575, 555, 535, 510, 450, or 650 m.mu. (J-band) and these max. are believed to represent increasing degrees of aggregation of the dye in the order: 575, 535, 510, 450, and 650 m.mu.. The 555-m.mu. band appears to be assocd. with the J-band max. and probably does not represent the 1st increase in aggregation from the monomer. The interactions of the dye with inorg. salts, polypeptides, simple proteins, conjugated proteins, synthetic polypeptides, nucleic acids, carbohydrates, amino acids, pyrimidine and purine bases, nucleosides, and nucleotides were all investigated. In amts. <0.002%, only proteins, synthetic polypeptides, nucleic acids, and substituted polysaccharides caused changes in the absorption spectrum of the dye. Mono-, di-, and trisaccharides, purine and pyrimidine bases, amino acids, and nucleosides had no effect. Polypeptides and nucleotides were usually effective only at higher concns., and the action of the inorg. salts depended upon the nature of the anion. Bivalent anions were very effective, and small amts. induced the formation of J bands. Univalent anions were much less effective, and relatively large amts. were required to induce the formation of a J band.
IT **7487-88-9**, **Magnesium sulfate**
(carbocyanine dye in soln. contg., mol. assocn. and spectrum of)
IT **7705-08-0**, Iron chloride, **FeCl3**
(carbocyanine dye mol. assocn. and spectrum in soln. contg.)
IT **7757-79-1**, **Potassium nitrate 7758-11-4**
, Potassium phosphate, **K2HPO4**
(carbocyannine dye in soln. contg., mol. assocn. and spectrum of)

CC 10 (Spectra and Some Other Optical Properties)
IT Proteins
(4,5,4',5'-dibenzo-3,3'-diethyl-9-methylthia-carbocyanine bromide spectrum in presence of)
IT Carbohydrates
Nucleotides
Peptides
Ribonucleic acids
(4,5,4',5'-dibenzo-3,3'-diethyl-9-methylthiacarbocyanine bromide spectrum in presence of)
IT Deoxyribonucleic acids
(4,5,4',5'-dibenzo-3,3'-diethyl-9-methylthiacarbocyanine bromide spectrum in presence of, complex formation and)
IT Myoglobin
(carbocyanine dye spectrum and)
IT Deoxyribonucleic acids
(carbocyanine dye spectrum in presence of)
IT Macromolecular compounds
(carbocyanine dye spectrum in presence of biol.)
IT Dyes
(carbocyanine, spectra of, effect of biol. macromols. on)
IT Albumins
(carbocyannine dye spectrum and)
IT Glycoproteins
(carbocyannine dye spectrum in presence of)
IT Gelatin
Glutenins
(carbocyannine dye spectrum in relation to)
IT Hemoglobin
(carbocyannnine dye spectrum in relation to)
IT Casein, Caseinogen
(effect on carbocyanine dye spectrum)
IT Globulins., .alpha.-
Globulins., .beta.-
(effect on carbocyannine dye spectrum)
IT Pituitary hormones and extracts
(follicle-stimulating and growth, effect on carlocyamine dye spectrumn)
IT Molecular association
(of carbocyanine dye in soln. contg. inorg. salts)
IT Spectra, visible and ultraviolet
(of dyes (carbocyanine), effect on biol. macromols. on)
IT Lactoglobulins
Lipoproteins
(.beta.-, effect on carbocyannine dye spectrum)
IT Aluminum ammonium sulfate, NH4Al(SO4)2
Ammonium chromate(VI), (NH4)2CrO4
(carbocyanine dye in soln. contg., mol. assocn. and spectrum of)
IT Copper sulfate, acidic
(carbocyanine dye in, mol. assocn. and spectrum of)
IT Adenosine phosphate, cyclic 2',3'-phosphate
Alanine, N-DL-leucyl-3-phenyl-, DL-
Aspartic acid (aminosuccinic acid), peptides or polymers
Cytidine phosphates, cyclic 2',3'-phosphate
Guanosine phosphates, cyclic 2',3'-phosphate
Norvaline, N-DL-leucyl-, DL-
Tyrosine, N-glycyl-, L-, apocarboxypeptidase complex
(carbocyanine dye spectrum in presence of)
IT Phosphine, triphenyl-, compd. with H2[SnBr6] (2:1), mixt. with [Ph3P]2.H2[UBr6]
Phosphine, triphenyl-, compd. with H2[SnCl6] (2:1), mixt. with

[Ph3P]2.H2UCl6
Phosphine, triphenyl-, compd. with H2[UBr6] (2:1), mixt. with [Ph3P]2.H2[SnBr6]
Phosphine, triphenyl-, compd. with H2[UCl6] (2:1), mixt. with [Ph3P]2.H2SnCl6
(spectrum of)

IT Benzoselenazolium compounds, 3-ethyl-2-[2-[(3-ethyl-2-benzoselenazolinylidene)methyl]-1-butenyl]-, ion
Benzothiazolium compounds, 3-ethyl-2-[2-[(3-ethyl-2-benzothiazolinylidene)methyl]-1-butenyl]-, ion
Benzothiazolium compounds, 3-ethyl-2-[3-(3-ethyl-2-benzothiazolinylidene)-2-methylpropenyl]-
Benzothiazolium compounds, 5-chloro-2-[2-[(5-chloro-3-methyl-2-benzothiazolinylidene)methyl]-1-butenyl]-3-methyl-, ion
Benzoxazolium compounds, 3-ethyl-2-[2-[(3-ethyl-2-benzoxazolinylidene)methyl]-1-butenyl]-, ion
Benzoxazolium compounds, 3-ethyl-2-[3-(3-ethyl-2-benzoxazolinylidene)-2-methylpropenyl]-, iodide
Naphtho[1,2-d]thiazolium compounds, 1-ethyl-2-[3-(1-ethylnaphtho[1,2-d]thiazolin-2-ylidene)-2-methylpropenyl]-
Naphtho[1,2-d]thiazolium compounds, 2-[[2-(1-methylnaphtho[1,2-d]thiazolin-2-ylidene)methyl]-1-butenyl]-1-methyl-, ion
(spectrum of, effect of biol. macromols. on)

IT 9004-07-3, Chymotrypsin
(carbocyannine dye spectrum in presence of)

IT 497-19-8, Sodium carbonate, Na2CO3 7447-40-7, Potassium chloride **7487-88-9**, **Magnesium sulfate** 7558-80-7, Sodium phosphate, NaH2PO4 7631-99-4, Sodium nitrate 7646-85-7, Zinc chloride 7647-14-5, Sodium chloride 7733-02-0, Zinc sulfate 7757-82-6, Sodium sulfate, Na2SO4 7784-25-0, Ammonium aluminum sulfate, NH4Al(SO4)2 7786-30-3, Magnesium chloride 10124-37-5, Calcium nitrate
(carbocyanine dye in soln. contg., mol. assocn. and spectrum of)

IT 7789-45-9, Copper bromide, CuBr2
(carbocyanine dye in, mol. assocn. and spectrum of)

IT **7705-08-0**, Iron chloride, **FeCl3**
(carbocyanine dye mol. assocn. and spectrum in soln. contg.)

IT 50-56-6, Oxytocin 365-07-1, 5'-Thymidylic acid 556-33-2, Glycine, N-(N-glycylglycyl)- 556-50-3, Glycine, N-glycyl- 606-02-0, Uridine, cyclic 2',3'-phosphate 637-84-3, Glycine, N-[N-(N-glycylglycyl)glycyl]- 653-63-4, Adenosine, 2'-deoxy-, 5'-phosphate 688-14-2, Leucine, N-glycyl-, DL- 721-66-4, Alanine, N-glycyl-3-phenyl-, DL- 869-19-2, Leucine, N-glycyl-, L- 902-04-5, Guanosine, 2'-deoxy-, 5'-phosphate 922-55-4, Alanine, 3,3'-thiodi-, L- 926-77-2, Alanine, N-glycyl-, DL- 927-21-9, Glycine, N-(N-DL-alanylglycyl)- 997-05-7, Glycine, N-D-leucyl- 1032-65-1, Cytidine, 2'-deoxy-, 5'-phosphate 1504-41-2, Norleucine, N-glycyl-, DL- 1999-33-3, **Asparagine**, N2-glycyl-, L- 1999-34-4, Methionine, N-glycyl-, DL- 1999-41-3, **Asparagine**, N2-DL-alanyl-, DL- 1999-42-4, Leucine, N-DL-alanyl-, DL- 1999-45-7, Alanine, N-DL-alanyl-3-phenyl-, DL- 1999-46-8, Valine, N-DL-alanyl-, DL- 2189-27-7, Norvaline, N-glycyl-, DL- 2325-17-9, Valine, N-glycyl-, DL- 2325-18-0, Norvaline, N-DL-alanyl-, DL- 2390-74-1, Tryptophan, N-glycyl-, L- 2733-45-1, Histidine, N-histidyl- 2867-20-1, Alanine, N-DL-alanyl-, DL- 4337-37-5, Glycine, N-(N-DL-leucylglycyl)- 6018-48-0, Cytidine, sulfate 9005-32-7, Alginic acid 18625-22-4, Glycine, N-(N-D-leucylglycyl)- 19079-66-4, Norleucine, N-DL-alanyl-, DL- 23851-28-7, Glycine, N-glycyl-, hydrochloride 24667-21-8, **Asparagine**, N2-glycyl-, D-
(carbocyanine dye spectrum in presence of)

IT 9001-03-0, Carbonic anhydrase 9002-07-7, Trypsin
(carbocyanine dye spectrum in relation to)

IT 3251-23-8, Copper nitrate, Cu(NO3)2 **7757-79-1, Potassium nitrate 7758-11-4**, Potassium phosphate, **K2HPO4** 7778-77-0, Potassium phosphate, KH2PO4 7778-80-5, Potassium sulfate, K2SO4 7783-20-2, Ammonium sulfate 10028-22-5, Iron sulfate, Fe2(SO4)3 10043-52-4, Calcium chloride 10421-48-4, Iron nitrate, Fe(NO3)3
(carbocyannine dye in soln. contg., mol. assocn. and spectrum of)
IT 77950-94-8, Carboxypeptidases
(carbocyannine dye spectrum and)
IT 9001-10-9, Pepsinogen 9001-75-6, Pepsin 9001-91-6, Plasminogen 9001-99-4, Ribonucleases
(carbocyannine dye spectrum in presence of)
IT 9001-45-0, .beta.-Glucuronidase
(carbocyannine dye spectrum in relation to)
IT 9004-10-8, Insulin 9012-54-8, Cellulase 9032-75-1, Pectinase
(effect on carbocyannine dye spectrum)
IT 9002-13-5, Urease
(spectrum of carbocyannine dye in presence of)

L92 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1964:24968 HCAPLUS
DOCUMENT NUMBER: 60:24968
ORIGINAL REFERENCE NO.: 60:4465d-h,4466a-b
TITLE: Mechanism of amino acid synthesis in plants. I. The route of 14C in the formation of amino acids in Chlorella vulgaris
AUTHOR(S): Ferrari, Giovanni; Passera, Calvino; Cultrera, Rolando
CORPORATE SOURCE: Univ. Padua, Italy
SOURCE: Rio. Sci., Rend. Sez. B (1963), 3(2), 181-8
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The photochemical synthesis of amino acids in algae was studied. C. vulgaris was grown at 25.degree. in a nutrient soln. contg. per 1., **KNO3** (200 mg.), **K2HPO4** (40 mg.), **MgSO4** (30 mg.), Ca(NO3)2 (100 mg.), a few drops of **FeCl3** soln. and exts. of earth and moss. Growth took place in bottles in a current of air contg. 5% CO2 and illuminated by a 200 w. lamp at 40 cm. distance. Illumination was for 16-hr. periods followed by 8-hr. periods of darkness. From 250 ml. of medium inoculated with 0.01 ml. of washed centrifugally packed C. vulgaris, 3 ml. of similarly packed material was obtained in 72 hrs. The material thus obtained was suspended in fresh medium (50 ml.) and illuminated for 15 min. after which NaH14CO3 of 0.1 mc./mg. was added (0.1 ml. .tplbond. 70 .gamma. NaHCO3 with a total activity of 7 .mu.c.). Illumination was resumed for the required period and the mixt. then rapidly poured into boiling EtOH to give a final ethanolic concn. of 80%. The mixture was centrifuged and the residue extd. 3 times with 80% ethanol and twice with 20% ethanol at 60.degree.. The combined centrifugate and exts. were concd. to 5-10 ml., dild. with H2O (20 ml.) and adjusted to pH 7.+-. 0.1. Four 8 mm. diam. ion exchange columns were prepd., viz., (A) Amberlite GC 120 (10 cm.) NH4+ form; (B) the same, H + form; (C) Amberlite IR 4B (20 cm.) HCOOH form; (D) Amberlite IRA 400 (20 cm.) HCOOH form. The prepn. was passed through columns A, B, and D consecutively, each column being washed with 80% EtOH. The columns were then eluted as follows: A. 2N NH4OH (80 ml.) then H2O (40 ml.). Basic amino acids eluted, fraction 1; B. 2N NH4OH (40 ml.) then H2O (50 ml.). Acid and neutral amino acids eluted, fraction 2; D. 4N HCOOH. Organic acids and phosphoric esters eluted, fraction 3. The percolate from D contained sugars, fraction 4. Fraction 2 was passed through the column C after removal of NH3 by vacuum distn. The percolate contained neutral amino acids, fraction 2b, and elution of the column with 4N HCOOH produced acid amino acids, fraction 2a. All fractions were evapd. to dryness and subjected to bidimensional

paper chromatography. Developers used were: fraction 2a and 2b, butanol-acetic acid-H2O, 12:3:5 and phenol-H2O; fraction 1, phenol-citrate buffer pH 4 (one dimensional); fraction 3, butanol-acetic acid-H2O, 4:1:5 and EtOH-NH4OH (22% Be)-H2O 16:1:3. Radioactivity of the fractions was revealed by placing the chromatograms in contact with x-ray sensitive plates for 1 week then developing. Radioactive spots on the paper were counted with a Geiger counter and the activity was related to the amt. of substance as detd. on a sep. aliquot by Moore and Stein's column chromatographic method. One ml. of the packed algae contained 75 mg. dry substance; the N extd. was 0.28 mg./ml. packed algae, which was 4.5% of the total N. Amino acids present were: acid, aspartic and glutamic; basic, arginine, lysine and ornithine; neutral, methionine, isoleucine, leucine, glutamine, serine, glycine, alanine, proline, threonine, valine, tyrosine, phenylalanine, and **asparagine**. Expts. were made with 9, 90 and 900 sec. illumination. With increasing illumination, there was a relative decrease in radioactivity in fraction 3 and increases in fractions 2a, 2b, and 4. Fraction 1 increased between 9 and 90 sec. and then remained unchanged. The results indicate a transfer of 14C and show that at least part of the amino acid synthesis was by amination of the 1st products of 14CO2 fixation. The behavior of fraction 1 suggests the existence of another route of C incorporation. Consideration of the sp. activities of the amino acids suggests that aspartic, glycine, serine, and alanine are synthesized at the threshold of the Calvin cycle. Aspartate showed pre-eminent activity at all periods, suggesting an independent synthetic mechanism. Glycine showed a rapid uptake of 14C in the 1st 2 periods and little increase in the 3rd. Glutamic uptake was exceptionally low, suggesting its formation at a different metabolic level from the other acids. Among basic acids uptake in the first 90 sec. was practically confined to arginine and it is suggested that the 14C was probably in the guanidyl group.

CC 61 (Plant Biochemistry)

IT Chlorella vulgaris
(amino acid formation by)

IT Amino acids
(formation of, by Chlorella vulgaris)

L92 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1963:85426 HCAPLUS
DOCUMENT NUMBER: 58:85426
ORIGINAL REFERENCE NO.: 58:14664e-f
TITLE: .DELTA.1-Dehydrosteroids
INVENTOR(S): Kabamichi, Jiro
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd.
SOURCE: 3 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 37011022		19620814	JP	19580812

AB Azotomonas fluorescens is cultured in a medium (pH 7.0) contg. mannitol 1.5, **asparagine** 0.05, CaCl2 0.1, **K2HPO4** 0.1, **KNO3** 0.05, **MgSO4** 0.02, NaCl 0.01, and **FeCl3** 0.0002% at 28.degree. for 48 hrs., then cultured another 48 hrs. with 500 mg. 4-pregnene-11.beta.,17.alpha.,21-triol-3,20-dione, the soln. is adjusted to pH 4.0, extd. with AcOEt, the ext. evapd., and chromatographed with alumina to give 350 mg. 1,4-pregnadiene- 11.beta.,17.alpha.,21-triol-3,20-dione. Similarly prepd. are: 1,4-pregnadiene-17a,21-diol-3,20-dione and 17.alpha.-methyl-1,4-androstadien- 17.beta.-ol-3-one (m.

162-3.degree.).
CC 74 (Fermentations)
IT Azotomonas fluorescens
(.DELTA.1-dehydrosteroids from)
IT Fermentation
Fermentation
(.DELTA.1-steroid, by Azotomonas fluorescens and A, indicus)
IT Pregna-1,4-diene-3,20-dione, 11.beta.,17,21-trihydroxy-(prednisolone)
(manuf. of, by Azotomonas fluorescens)
IT Pregna-1,4-diene-3,20-dione, 11.beta.,17,21-trihydroxy-(prednisolone)
(manuf. of, by Azotomonas indicus)
IT Pregna-1,4-diene-3,20-dione, 11.beta.,17,21-trihydroxy-(prednisolone)
(manuf. of, by Helminthosporium turcicum)
IT 72-63-9, Androsta-1,4-dien-3-one, 17.beta.-hydroxy-17-methyl-
(by Alcaligenes faecalis fermentation, by Azotomonas fluorescens)
IT 1807-14-3, Pregna-1,4-diene-3,20-dione, 17,21-dihydroxy-
(manuf. of, by Azotomonas fluorescens)

L92 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1956:70100 HCAPLUS
DOCUMENT NUMBER: 50:70100
ORIGINAL REFERENCE NO.: 50:13190h-i,13191a
TITLE: Physiological studies on Phytophthora infestans. II. Nitrogen source of Phytophthora infestans
AUTHOR(S): Sakai, Ryutaro
CORPORATE SOURCE: Hokkaido Agr. Exptl. Sta., Sapporo
SOURCE: Ann. Phytopathol. Soc. Japan (1955), 19, 141-5
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The basal medium used in this expt. was modified Tochinai and Nakano medium contg. **KNO3** 2.0 g., KH2PO4 0.5 g., **K2HPO4** 0.5 g., **MgSO4**.7H2O 0.5 g., CaCl2.2H2O 0.5 g., glucose 30.0 g. and **FeCl3** trace per l. distd. water and pH of the medium was adjusted to 5.5. As growth factor for this fungus, 0.1 p.p.m. thiamine-HCl was optimum. **KNO3** of the basal medium was substituted by various inorg. N salts and amino acids. **KNO3**, NaNO3, NH4NO3, (NH4)2SO4, (NH4)2HPO4, KNO2 and NaNO3 were used. Nitrate was a good N source for mycelial growth but NH4+ was not. **Asparagine**, aspartic acid, glutamic acid, and arginine-HCl were more utilizable N sources than NO3 and proline, glutamine, and phenylalanine were good. However, valine, tryptophan, leucine, lysine, isoleucine, methionine, cystine, alanine, and glycine were less effective than NO3-. No growth was found in the media contg. tyrosine, threonine, or serine.
CC 11D (Biological Chemistry: Botany)
IT Phytophthora infestans
(culture medium for)
IT 7727-37-9, Nitrogen
(sources of, for Phytophthora infestans)